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| EXAMINER | |
|---|---|
| LEE, MARINA | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/824,253 | RAJAGOPAL ET AL. | |
| | Examiner | Art Unit | |
| | MARINA LEE | 2192 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4 and 6-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This action is responsive to Amendments dated February 19, 2008.

Claims 1, 8, 11, and 15 have been amended.

Claim 5 has been cancelled.

Claims 19-22 have been newly added.

Accordingly, claims 1-4, and 6-22 are pending and presented for the examination.

2. Examiner maintains the 101Rejection to claims 1-4 and 6-10 regardless to the Applicant's amendment to the claims as will be detail addressed under item (7) bellow.

3. Applicants' arguments for the claims have been fully considered but they are not persuasive, as will be also addressed under Prior Art's Arguments – rejections section at item (3) below. Thus, the rejection of the claims over prior art in the previous Office Action is maintained in light of the additional clarification to the newly added/amended claims hereon and accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Prior Art's Arguments – Rejections***

4. Applicants' arguments filed February 19, 2008 have been fully considered but they are not persuasive.

As to the amended claim 1, which now included the claim 5 limitation, Applicant contends that Iborra does not disclose "a first class providing a level of abstracting between a second class and third class, the second class and the third class searchable by the first class" – See ¶1, page 7 of Remarks, which Examiner disagrees.

Examiner responses is that, the plain language of the amended claim 1 now recites to include "A computer-readable medium having stored thereon a data structure for a type system, ..... the data structure comprising:

a) a base class….

b) at least one controller object,…; and

c) a first class providing a level of abstract between a second class and a third class, the second and the third class searchable by the first class."

As can be seen from the above assertion, the plain language of the claim would be reasonably interpreted with emphasis added as, the data structure comprising 3 elements for the type system, and those three elements are "a base class", "at least one controller object" and "a first class (abstract class) to "a

second and a third class" and the second and third class are searchable by the first class".

Even though the claims recites “[the] second and third class are searchable by the first class” would not prevented the claim from being interpreted as (e.g., inheritance classes between parent and child classes" as cite in Iborra (e.g., page 8, [0093]), because the “parent class” (first class) is already implied that it contains the abstract information (e.g., attributes) to the children classes (second class & third class). Furthermore, "the second and third classes are searchable by the first class” would also anticipate with the Iborra citation, that is the children class (the second and third class) are related to the parent class in term of “attributes (e.g., types)" meaning that the children class always inheritance the properties/attributes from the parents class, therefore, would be searchable -- see at least page 8: [0093] and [0089] with emphasis added. Accordingly, as of the above explanation, Iborra does read on the amended claim 1 recitation.

As to the independent claims 11 and 15, Applicant calls for similar argument as of claim 1 above (see Remarks, ¶ 1, page 8) , but fails to be found persuasive as of forgoing explanation in claim 1 above.

As to claims 6, Applicant contends that Iborra does not teach or suggest the claims recitation "[the] second class and the third class comprise nested class" – see ¶3, page 8 of Remarks with emphasis added, which Examiner respectively disagrees. The "nesting class" would be broadly reasonably interpretation as “classes are assembled/ grouped together”, which Iborra also

anticipates the "nesting class" limitation (e.g., classes gather into a cluster for easier to analyze or reduce the complexity of the object model view) – see at least page 9, [0109] with emphasis added.

The new added claims 19 and 21, Examiner notes that Applicant calls for similar argument as of claim 6 above (see Remarks, ¶ 4, page 8) , but fails to be found persuasive as of the above forgoing explanation in claim 1.

As to claim 7, Applicant argues that, Iborra does not disclose the claim recitation "[the] second and third classes comprise nested namespace" – see Remarks, ¶ 5, page 8 with emphasis added. Again, with reasonably broad interpretation the "nested namespace" would be interpreted as "a collection of class names that are grouped together", which is also anticipated by Iborra, (e.g. inheritance hierarchies is a collection of class parents and children's names ) – see at least page 8, [0093] and page 9, [0108] with emphasis added.

The new added claims 20 and 22, Examiner notes that Applicant calls for similar argument as of claim 17 above (see Remarks, ¶ 4, page 8), but fails to be found persuasive as of forgoing explanation in claim 17 above.

The remaining claims directly or indirectly depends upon the independent claims, (*See Remark,* page 8 , ¶ 2) are also fall together as Applicants relied upon rebuttal for the independent claims but fail to be found persuasive as noted above.

### *Claim Rejections*

5. Claims 1-4 and 6-22 are still pending and stand finally rejected in light of the additional clarifications provided and/or **addressed at item (3) above – *Prior Art's Arguments – rejections.***

### *Claim Objections*

*6.* Claims 6 – 8 are objected to because of the following informalities:

As per claims 6 and 7 (line1), recite to include "medium of *claim 5*" should be changed to --medium of *claim 1*--. Appropriate correction is required.

As to claim 8, (line 3), recites to include, "*c)* a container…" should be changed to --*d)* a container…--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 101*

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to claim 1, recites "A computer-readable medium having stored thereon a data structure for a type system… the data structure comprising:

a) a base class for capturing…

b) at least one controller object…

c) a first class providing a level of abstraction between a second class and a third class….".

The "data structure" here as presently drafted merely amount to a non-functional descriptive material, as there is no "act" actually being performed–*See MPEP 2106.01(II).*

Claims 2-4 and 6-10 recite limitations that do not cure the deficiency of the base claim 1, which regarding to the rejection of non-statutory under 35 USC 101. Therefore, they are also rejected for not meeting the statutory under 35USC 101.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4 and 6-22 are rejected under 35U.S.C. 102(b) as being anticipated by Iborra et al., (U.S. Patent Application Publication No. 2002/0100014 A1 of record – hereinafter "Iborra").

**As to claim 1**, Iborra discloses a computer-readable medium (e.g., floppy disk – *see page 6, [0075])* having stored thereon a data structure for a type system, the data structure providing requested services on an artifact in the type system, the data structure comprising:

a) a base class for capturing common functionality of objects of the type system (e.g., Conceptual Model produce in UML modeling by CASE TOOL 210). – *See (step 200 and 210, Fig. 1, page 7: [0082]: 1-11, and CASE Modeler section begin at page 7:[0085] and following)*; and

b) at least one controller object, the controller object in communication with the base class, the at least one controller object validating the requested services based on a set of rules associated with a programming language (e.g.., system logic translator 232 implement a precise execution model that corresponds to the validated formal specification 215 (OASIS language) – *See (page 7: [0083] and associated text);* and

c) a first class providing a level of abstraction between a second and a third class, the second and third class searchable by the first class *(e.g., inheritance classes between parent and child classes, which "the parent class" is already implied that it contains the abstract information (e.g., attributes) to the children classes (second class & third class). Furthermore the children class (the second and third class) are related to the parent class in term of "attributes (e.g., types)" meaning that the children class always inheritance the properties/attributes from the parents class -- see at least page 8: [0093] and [0089] with emphasis added.*

**As to claim 2**, Iborra further discloses wherein the artifact comprises one or a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event (e.g., the CASE tool 210 collects information organized around projects which correspond to different applications. Each

project built by the CASE tool 210 can include information about classes, relationship between classes, global transactions, global functions, and view). – *See (page 7-8: [0088]-[0095] and related text).*

**As to claim 3,** Iborra further discloses wherein the programming language comprise one of Visual Basic, C++, C#, and J# (e.g., Translator 232 automatically write a complete working program for the formal specification into working code in some target computer language such as Visual Basic, C++, assembly code for any microprocessor, etc.). –*See (page 3: [0025]).*

**As to claim 4**, Iborra discloses further wherein the base class determines the at least one controller object to communicate with in order to validate the request services (e.g., the CASE tool 210 captures a formal specification of the designer's system "on the fly" according to a formal specification language while the designer is specifying the system with the CASE tool 210). *See (page 7: [0086]).*

**As to claim 6**, Iborra further discloses wherein the second class and the third class comprise nested classes (*e.g., classes gather into a cluster for easier to analyze or reduce the complexity of the object model view) – see at least page 9, [0109] with emphasis added.*

**As to claim 7**, Iborra further discloses wherein the second class and the third class include nested namespaces *(E.g. inheritance hierarchies is a collection of class parents and children's names) – see at least page 8, [0093] and page 9, [0108] with emphasis added.*

**As to claim 8**, Iborra further discloses wherein the data structure further comprises:

d) a container for storing types in the type system (e.g., OASIS template – *See page 33, [0662]: 6-8*).

**As to claim 9**, Iborra further discloses wherein the requested services comprise modifying the artifact in the type system (*see page 5, [0056], Fig. 9C, pages 20-21, [0335]-[0393], and page 5 [0063], Fig. 15, Pages13-14, [0477]-[0479]).*

**As to claim 10**, Iborra further discloses wherein the requested services comprise creating a new artifact in the type system *(see page 23, [0457] and [0468])*.

**As to claim 11**, Iborra discloses a method of modifying an artifact for use in a type system meta-model (*see page 5, [0056], Fig. 9C, pages 20-21, [0335]-[0393], and page 5 [0063], Fig. 15, Pages13-14, [0477]-[0479])*, the method comprising:

a) receiving a request from an application programming interface to modify an artifact in the type system meta-model(*see page 5, [0056], Fig. 9C, pages 20-21, [0335]-[0393], and page 5 [0063], Fig. 15, Pages13-14, [0477]-[0479]),* wherein the type system meta-model includes a first class providing a level of abstraction between a second and a third class, the second and the third class searchable by the first class *(e.g., inheritance classes between parent and child classes, which "the parent class" is already implied that it contains the abstract information (e.g., attributes) to the children classes (second class & third class).*

*Furthermore the children class (the second and third class) are related to the parent class in term of "attributes (e.g., types)" meaning that the children class always inheritance the properties/attributes from the parents class -- see at least page 8: [0093] and [0089] with emphasis added.*

b) in response to a) issuing a least one instruction to a language specific controller rules associated with a programming language(e.g., Conceptual Model produce in UML modeling by CASE TOOL 210). – *See (step 200 and 210, Fig. 1, page 7: [0082]: 1-11, and CASE Modeler section begin at page 7:[0085] and following)*; and

c) in response to a validated request form the language specific controller, modifying the artifact(e.g.., system logic translator 232 implement a precise execution model that corresponds to the validated formal specification 215 (OASIS language) –*See (page 7: [0083] and associated text)*.

**As to claim 12**, Iborra also discloses wherein the method further comprise the step of:

a) transmitting a response to the application programming interface that the artifact has been modified *(see page 7 [0083]:6-9).*

**As to claim 13**, Iborra further discloses wherein the artifact comprises one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event (e.g., the CASE tool 210 collects information organized around projects which correspond to different applications. Each project built by the CASE tool 210 can include information about classes,

relationship between classes, global transactions, global functions, and view). – *See (page 7-8: [0088]-[0095] and related text).*

**As to claim 14**, Iborra further discloses wherein the programming language comprises one of Visual Basic, C++, C#, and J# (e.g., Translator 232 automatically write a complete working program for the formal specification into working code in some target computer language such as Visual Basic, C++, assembly code for any microprocessor, etc.). –*See (page 3: [0025])*.

**As to claim 15**, Iborra discloses a method of creating an artifact for use in a type system meta-model *(see page 23, [0457] and [0468])*, the method comprising:

a) receiving a request form an application programming interface to create an artifact in the type system meta-model *(see page 23, [0457] and [0468])*, wherein the type system meta-model includes a first class providing a level of abstraction between a second and a third class, the second and the third class searchable by the first class *(e.g., inheritance classes between parent and child classes, which "the parent class" is already implied that it contains the abstract information (e.g., attributes) to the children classes (second class & third class). Furthermore the children class (the second and third class) are related to the parent class in term of "attributes (e.g., types)" meaning that the children class always inheritance the properties/attributes from the parents class -- see at least page 8: [0093] and [0089] with emphasis added;*

b) in response to a) issuing at least one instruction to a language specific controller object, the language specific controller object validating the request

based on rules associated with a programming language (e.g., Conceptual Model produce in UML modeling by CASE TOOL 210). – *See (step 200 and 210, Fig. 1, page 7: [0082]: 1-11, and CASE Modeler section begin at page 7;[0085] and following)*; and

c) in response to a validated request form the language specific controller, creating the artifact(e.g.., system logic translator 232 implement a precise execution model that corresponds to the validated formal specification 215 (OASIS language) –*See (page 7: [0083] and associated text)*.

**As to claim 16**, Iborra also discloses wherein the method further comprises the step of:

d) transmitting a response to the application programming interface that the artifact has been created *(see page 7 [0083]:6-9).*

**As to claim 17**, Iborra further discloses wherein the artifact comprises one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, property, an event (e.g., the CASE tool 210 collects information organized around projects which correspond to different applications. Each project built by the CASE tool 210 can include information about classes, relationship between classes, global transactions, global functions, and view). –*See (page 7-8: [0088]-[0095] and related text)*.

**As to claim 18**, Iborra further discloses wherein the programming language comprises one of Visual Basic, C++, C#, and J# (e.g., Translator 232 automatically write a complete working program for the formal specification into

working code in some target computer language such as Visual Basic, C++, assembly code for any microprocessor, etc.). –*See (page 3: [0025]).*

**As per claims 19 and 21**, Iborra further discloses the second class and the third class comprise nested classes (*e.g., classes gather into a cluster for easier to analyze or reduce the complexity of the object model view) – see at least page 9, [0109] with emphasis added.*

**As per claims 20 and 22**, Iborra further discloses the second class and the third class comprise nested namespaces *(E.g. inheritance hierarchies is a collection of class parents and children's names) – see at least page 8, [0093] and page 9, [0108] with emphasis added.*

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to application disclosure.

Berenbach et al., (US 2005/0076328 A1) is cited to teach rule-based system and method for checking compliance of architectural analysis and design models.

Bussler et al. (US 2005/0125806 A1) is cited to teach system and method for validating objects models.

Sreedhar et al. (US 2005/0071806 A1) is cited to teach variational modeling using extension types.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Lee whose telephone number is (571)

270-1648. The examiner can normally be reached on M-F (11:00 am to 7: 30 pm) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. L. /

Examiner, Art Unit 2192

May 20, 2008

/Tuan Q. Dam/

Supervisory Patent Examiner, Art Unit 2192